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ABSTRACT OF THE DISCLOSURE

The present invention provides methods and systems for efficiently compressing information, such as speech data. By generating an excitation signal containing a number of zero and non-zero values and convolving the first signal with a known transfer function, a signal such as a codec residual signal can be compressed. While a convolution between any two signals can require a large number of multiply-and-accumulate operations, convolution between an excitation signal and impulse response can be made more efficient by multiplying only the non-zero values of the excitation signal with respective values of the impulse response.